

138 wherein the disc rotation driving means, the optical pickup, and the feeding mechanism are located on the base such that a center of gravity of the base lies along the center line.

REMARKS

Favorable reconsideration of this application, in view of the above amendments and in light of the following discussion and remarks, is respectfully requested.

Applicants respectfully request entry of this response, as the response places the application in clear condition for allowance, or alternatively places the claims in better form for appeal. Upon entry of this response, Claims 1-26 are presently active; Claims 1, 2, 8, 9, 15, 16, 22, and 25 having been amended by way of the present response.

In the outstanding Office Action, Claim 1-21, 25, and 26 were apparently rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,160,780 to Furukawa et al. (hereafter Furukawa) in view of U.S. Patent No. 4,831,476 to Branc et al. (hereafter Branc).¹ Claims 22-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Furukawa in view of U.S. Patent No. 5,657,172 to Shibata et al. (hereafter Shibata).

As discussed above, independent Claims 1, 8, 15, 22, and 25 have been amended to include, among other features, features of the dependent claims, and dependent Claims 2, 9, and 16 have been amended to avoid the recitation of duplicative features. Applicants respectfully assert that support for these changes to the claims are self-evident, and therefore no new matter has been added.

The present invention is directed to a disc drive. Independent Claims 1, 8, 15, 22, and

¹ Although the Office Action initially asserts that the rejection has been applied to Claims "1, 3-8, 10-15 and 17-21" on page 2, lines 20-22, the rejection sets forth grounds of rejection for Claims 1-21, 25, and 26 from page 2, line 23 to page 9, line 3.

25 recite a base made of a single flat metal plate that is rectangular in shape. As recited in independent Claim 1, four receiving portions for receiving support for the base are disposed on four corners of the base. As recited in independent Claim 8, four receiving portions are disposed on four corners of the base for receiving supporting means. As recited in independent Claim 15, the base has four receiving portions on four corners. A base support member for supporting the base with a plurality of supporting means is disposed on the receiving portions of the base. As recited in Claim 22, the base has four receiving portions on four corners. A plurality of supporting means disposed on the base with an associated elastic member for elastically supporting the base is disposed on the receiving portions of the base. As recited in independent Claim 25, the base has four receiving portions on four corners. At least four supporting means each with an associated elastic member for elastically supporting the base are disposed on the receiving portions of the base. Examples of advantages of such disc drives are discussed throughout the specification.

Furukawa is directed to a disc drive including a disc clamper. As shown in Figures 1-3, 7, and 21, for example, of Furukawa, a disc drive 1 includes a main body 2 and a disc tray 5.² A mechanism unit 42 is disposed in the main body 2 and includes a support plate 44 with a turn-table 46 and an optical pick-up 47.³ Elastic members 441 hold the support plate 44 in a base frame 43 and prevent vibrations caused by the turn-table 46 from being transmitted to mechanism unit 42.⁴ The mechanism unit 42 is arranged inside a roughly rectangular-shaped opening 41 formed in a bottom portion 40a of a chassis 40.⁵ The chassis

²Column 4, lines 1 to 7.

³Column 5, lines 31 to 40.

⁴Column 5, lines 41 to 64.

⁵Column 5, lines 31-33.

40, which is preferably constructed from a hard resin, is constructed from the bottom portion 40a having the roughly rectangular-shaped aperture 41 and an U-shaped wall portion 40b which stands erect along left, right and back edge portions of the bottom portion 40a.⁶

The Office Action asserts that the chassis 40 and the elastic members 441 of Furukawa are analogous to the claimed features of the base and the receiving portions, respectively, as recited in independent Claims 1, 8, 15, 22, and 25. Even if Applicants agreed with this assertion, which Applicants do not, Furukawa still does not teach or suggest the features recited in the independent claims. Rather, Applicants respectfully assert that because Furukawa does not teach or suggest the elastic members 441 disposed on four corners of the chassis 40, but rather teaches the elastic members 441 enclosed within the mechanism unit 42, Furukawa does not teach or suggest the claimed features of a base having four receiving portions on four corners, as recited in independent Claims 1, 8, 15, 22, and 25.

Specifically, independent Claim 1 recites “four receiving portions for receiving support for the base, the receiving portions being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the recording and/or reading means on four corners of the base.” Independent Claim 8 recites “four receiving portions disposed on four corners of the base for receiving the supporting means.” Independent Claim 15 recites “a base made of a single flat metal plate that is rectangular in shape and has four receiving portions on four corners supported by the support pedestal.” Independent Claim 22 recites “a plurality of supporting means disposed on the base with an associated elastic member for elastically supporting the base, the supporting means and the associated elastic members being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the optical pickup and on the

⁶Column 4, lines 29-35.

receiving portions of the base.” Independent Claim 25 recites “at least four supporting means each with an associated elastic member for elastically supporting the base, the supporting means and the associated elastic members being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the optical pickup and on the receiving portions of the base.”

The Office Action relies on Branc and Shibata in an attempt to overcome the deficiencies of Furukawa. However, Applicants respectfully assert that neither Branc nor Shibata, and the Office Action does not assert that either Branc or Shibata, teaches or suggests the claimed features of a base having four receiving portions on four corners, as recited in independent Claims 1, 8, 15, 22, and 25.

Thus, for the above-discussed reasons, Applicants respectfully assert that neither Furukawa, nor Branc, nor Shibata, alone or in combination, teaches or suggests the features recited in independent Claims 1, 8, 15, 22, and 25. Thus, for at least these reasons, Applicants respectfully request that the rejections of independent Claims 1, 8, 15, 22, and 25 under 35 U.S.C. § 103(a) be withdrawn and the independent claims allowed.

Notwithstanding the above discussion, which provides adequate grounds for the allowance of independent Claims 1, 8, 15, 22, and 25, Applicants further respectfully assert that a combination of Furukawa, Branc, and Shibata also does not teach or suggest other claimed features recited in the independent claims.

For example, as discussed in detail above, the Office Action asserts that the chassis 40 of Furukawa is analogous to the claimed feature of the base, as recited in independent Claims 1, 8, 15, 22, and 25. However, because the chassis 40 is constructed from a hard resin and includes the U-shaped wall portion 40b which stands erect along the left, right and back edge portions of the bottom portion 40a, Applicants respectfully assert that Furukawa also does not

teach or suggest the claimed features of a base that is a single flat metal plate that is rectangular in shape, as recited in the independent claims. Specifically, independent Claims 1, 8, 15, 22, and 25 recite “a base made of a single flat metal plate that is rectangular in shape.”

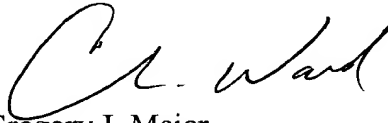
Further, although the Office Action again relies on Branc and Shibata in an attempt to remedy the deficiencies of Furukawa, Applicants respectfully assert that neither Branc nor Shibata, and the Office Action does not assert that either Branc or Shibata, teaches or suggests the claimed features of a base that is a single flat metal plate that is rectangular in shape. Thus, Applicants respectfully assert that the above discussion provides an additional sufficient grounds for withdrawal of the rejections of independent Claims 1, 8, 15, 22, and 25, and the allowance thereof.

Dependent Claims 2-7, 9-14, 16-21, 23, 24, and 26 depend from independent Claims 1, 8, 15, 22, and 25, and are therefore also allowable for at least the same reasons as the independent claims. Thus, for at least these reasons, Applicants respectfully request that the rejections of dependent Claims 2-7, 9-14, 16-21, 23, 24, and 26 under 35 U.S.C. § 103(a) be withdrawn and the dependent claims allowed.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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IN THE CLAIMS

The claims have been amended as follows.

1. (Twice Amended) A disc drive for driving a disc shaped recording medium,
comprising:

a base made of a single flat metal plate that is rectangular in shape;

disc rotation driving means disposed on the base for rotating a disc shaped recording
medium loaded in the base;

recording and/or reading means disposed on the base for recording data on and/or
reading data from the disc shaped recording medium;

guide means disposed on the base for movably supporting the recording and/or
reading means between inner and outer circumferences of the disc shaped recording medium,
while the disc shaped recording medium is rotated;

a feeding mechanism disposed on the base for feeding the recording and/or reading
means along the guide means; and

[a plurality of] four receiving portions for receiving support for the base, the receiving
portions being disposed symmetrically on the base with respect to a center line of the base
along the direction of the movement of the recording and/or reading means on four corners of
the base,

wherein the disc rotation driving means, the recording and/or reading means, and the

feeding mechanism are located on the base such that a center of gravity of the base lies along the center line.

2. (Amended) The disc drive according to claim 1, wherein the [base is made of a] single metal plate [of] is 1.4 mm to 1.8 mm in thickness.

8. (Twice Amended) An optical disc drive for recording data on and/or reproducing data from an optical disc, comprising:

a base made of a single flat metal plate that is rectangular in shape;

disc rotation driving means disposed on the base for rotating an optical disc loaded in the base;

an optical pickup disposed on the base for recording data on and/or reproducing data from the optical disk;

guide means disposed on the base for movably supporting the optical pickup between inner and outer circumferences of the optical disc, while the optical disc is rotated;

a feeding mechanism disposed on the base for feeding the optical pickup along the guide means;

a plurality of supporting means each with an associated elastic member for elastically supporting the base, the supporting means and the associated elastic members being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the optical pickup;

[a plurality of] four receiving portions disposed on four corners of the base for receiving the supporting means,

wherein the disc rotation driving means, the optical pickup, and the feeding mechanism are located on the base such that a center of gravity of the base lies along the center line.

9. (Amended) The optical disc drive according to claim 8, wherein the [base is made of a] single metal plate [of] is 1.4 mm to 1.8 mm in thickness.

15. (Twice Amended) An optical disc drive for recording data on and/or reproducing data from an optical disc, comprising:

a support pedestal;

a base made of a single flat metal plate that is rectangular in shape and has four receiving portions on four corners supported by the support pedestal;

disc rotation driving means disposed on the base for rotating an optical disc loaded in the base;

a disc tray movably disposed on the support pedestal between a first position where the optical disc is removable and a second position where the optical disc is at the disc rotation driving means;

an optical pickup disposed on the base for recording data on and/or reproducing data from the optical disc;

guide means disposed on the base for movably supporting the optical pickup between inner and outer circumferences of the optical disc, while the optical disc is rotated;

a feeding mechanism disposed on the base for feeding the optical pickup along the guide means; and

a base support member for supporting the base with a plurality of supporting means disposed symmetrically with respect to a center line of the base along the direction of the movement of the optical pickup and on the receiving portions of the base, each of the supporting means including an elastic member,

wherein the disc rotation driving means, the optical pickup, and the feeding mechanism are located on the base such that a center of gravity of the base lies along the

center line.

16. (Amended) The optical disc drive according to claim 15, wherein the [base is made of a] single metal plate [of] is 1.4 mm to 1.8 mm in thickness.

22. (Twice Amended) An optical disc drive for accurately recording data on and/or reproducing data from an optical disc, comprising:

a base made of a single flat metal plate that is rectangular in shape and has four receiving portions on four corners;

disc rotation driving means disposed on the base for rotating an optical disc loaded in the base;

an optical pickup disposed on the base for recording data on and/or reproducing data from the optical disc;

guide means disposed on the base for movably supporting the optical pickup between inner and outer circumferences of the optical disc, while the optical disc is rotated;

a feeding mechanism disposed on the base for feeding the optical pickup along the guide means;

a plurality of supporting means disposed on the base with an associated elastic member for elastically supporting the base, the supporting means and the associated elastic members being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the optical pickup and on the receiving portions of the base;

whereby weight shifts or imbalances caused by optical pickup movement are eliminated such that the balance of the base is maintained along the direction of movement during operation of the optical disc drive.

25. (Twice Amended) An optical disc drive for recording data on and/or reproducing

data from an optical disc, comprising:

a base made of a single flat metal plate that is rectangular in shape and has four receiving portions on four corners;

disc rotation driving means disposed on the base for rotating an optical disc loaded in the base;

an optical pickup disposed on the base for recording data on and/or reproducing data from the optical disc;

guide means disposed on the base for movably supporting the optical pickup between inner and outer circumferences of the optical disc, while the optical disc is rotated;

a feeding mechanism disposed on the base for feeding the optical pickup along the guide means; and

at least four supporting means each with an associated elastic member for elastically supporting the base, the supporting means and the associated elastic members being disposed symmetrically on the base with respect to a center line of the base along the direction of the movement of the optical pickup and on the receiving portions of the base,

wherein the disc rotation driving means, the optical pickup, and the feeding mechanism are located on the base such that a center of gravity of the base lies along the center line.